

Appl. No. 10/524,182; Docket No. US02 0297
Amdt. dated November 14, 2006
Response to Office Action dated October 5, 2006

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Amendments to the Claims

1. (*Cancelled*)

2. (*Currently Amended*) ~~The amplifier system of claim 1, wherein~~ An amplifier system having a gain that is variable, comprising:

a variable gain amplifier that provides the gain, having an input impedance that varies with the gain, and

a variable impedance device, including the variable impedance device includes a first transistor that is configured as a diode diode, the variable impedance device operably coupled in parallel with the input impedance of the variable gain amplifier,

wherein

the variable impedance device is configured to provide an impedance that varies in opposition to the input impedance of the variable gain amplifier as the gain is varied.

3. (*Original*) The amplifier system of claim 2, wherein

the variable gain amplifier includes a common emitter amplifier, and

the gain is varied by varying a bias current of the common emitter amplifier.

4. (*Original*) The amplifier system of claim 3, wherein

the variable gain amplifier includes:

a second transistor and third transistor that are configured as a current mirror, and

a variable current source that is configured to provide the bias current to the current mirror.

5. (*Original*) The amplifier system of claim 4, wherein

the variable impedance device includes an other variable current source that is configured to provide a diode bias current for biasing the first transistor, and

the impedance of the variable impedance device is based on the diode bias current.

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6. (*Original*) The amplifier system of claim 5, wherein

the diode bias current, I_d , substantially corresponds to:

$$I_d = \frac{M * I_{c_{max}} - I_c}{\beta};$$

and

M is a constant between 1.0 and 2.0,

$I_{c_{max}}$ is a maximum value of the bias current, I_c , of the variable gain amplifier, at a peak value of the gain.

7. (*Currently Amended*) ~~The amplifier system of claim 1,~~ The amplifier system of claim 2, wherein

the variable gain amplifier includes a common emitter amplifier, and

the gain is varied by varying a bias current of the common emitter amplifier.

8. (*Currently Amended*) ~~The amplifier system of claim 1,~~ The amplifier system of claim 2, wherein

the variable gain amplifier includes:

transistors that are configured as a current mirror, and

a variable current source that is configured to provide the bias current to the current mirror.

9. (*Currently Amended*) ~~The amplifier system of claim 1,~~ The amplifier system of claim 2, wherein

the variable impedance device includes a variable current source that is configured to provide a bias current that controls the impedance of the variable impedance device.

10. (*Cancelled*)

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11. (*Currently Amended*) ~~The transmitter of claim 10, wherein~~ A transmitter having a power output that is variable, comprising:
one or more variable gain amplifiers that provide a variable gain of an input signal to provide the variable power output,
each of the variable gain amplifiers including
an amplifier stage that provides a current that is variable, having an input impedance that varies with the gain, and
a variable impedance device, operably coupled in parallel with the input impedance of the amplifier stage, at least one of the variable impedance devices includes a first transistor that is configured as a diode; as a diode; and
wherein
the variable impedance device is configured to provide an impedance that varies in opposition to the input impedance of the amplifier stage as the gain is varied.

12. (*Original*) The transmitter of claim 11, wherein
at least one of the amplifier stages includes a common emitter amplifier, and
the gain is varied by varying a bias current of the common emitter amplifier.

13. (*Original*) The transmitter of claim 12, wherein
at least one of the amplifier stages further includes:
a second transistor and third transistor that are configured as a current mirror, and
a variable current source that is configured to provide the bias current to the current mirror.

14. (*Original*) The transmitter of claim 13, wherein
the at least one of the variable impedance devices includes an other variable current source that is configured to provide a diode bias current for biasing the first transistor, and
the impedance of the at least one of the variable impedance devices is based on the diode bias current.

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15. (Original) The transmitter of claim 14, wherein

the diode bias current, I_d , substantially corresponds to:

$$I_d = \frac{M * I_{c_{max}} - I_c}{\beta};$$

and

β is a gain factor of the third transistor,

M is a constant between 1.0 and 2.0,

$I_{c_{max}}$ is a maximum value of the bias current, I_c , of the variable gain amplifier, at a peak value of the gain.

16. (Currently Amended) ~~The transmitter of claim 10, wherein~~ The transmitter of claim 11, wherein

at least one of the amplifier stages includes a common emitter amplifier, and the gain is varied by varying a bias current of the common emitter amplifier.

17. (Currently Amended) ~~The transmitter of claim 10, wherein~~ The transmitter of claim 11, wherein

at least one of the amplifier stages includes:

transistors that are configured as a current mirror, and

a variable current source that is configured to provide a bias current to the current mirror, the gain being dependent upon the bias current.

18. (Currently Amended) ~~The transmitter of claim 10, wherein~~ The transmitter of claim 11, wherein

at least one of the variable impedance devices includes a variable current source that is configured to provide a bias current that controls the impedance of the variable impedance device.

19. (Currently Amended) ~~The transmitter of claim 10, wherein~~ The transmitter of claim 11, wherein

at least one of the variable gain amplifiers is driven by an L-C tuned circuit.